



SDI FINAL EVALUATION FORM 1.1

PART 1:

Journal Name:	British Journal of Mathematics & Computer Science
Manuscript Number:	2014_BJMCS_14799
Title of the Manuscript:	TRANSIENT SOLUTION OF MACHINE INTERFERENCE PROBLEM WITH AN UNRELIABLE SERVER UNDER MULTIPLE VACATIONS POLICY
Type of the Article	Short Research Article

PART 2:

FINAL EVALUATOR'S comments on revised paper (if any)	Authors' response to final evaluator's comments
1) The symbol θ has been explained but not completely. The vacation length is constant of random? I think that vacation length is exponentially distributed in the model! 2) In some equations – for example 4 – a strange symbol for λ is used. This problem has not been corrected! 3) The MATLAB code the author (s) provided is only for making up the equation system, but not for its solving! 4) The author states that the service rate is state dependent. But in the experiments only single value of the service rate is applied. In the equation system μ_n for $n = 0, 1, \dots, M$ is used, in MATLAB code only μ_1 and μ_2 is used and in the results only μ is used! Correct this inconsistency! Or discuss it. 5) Page 3, line 112 – the equation system is formed by 1+3M equations. But the number does not correspond to the definition of the state space. The state space is not defined correctly! You must exclude the states 1,0 and 2,0! The definition $(i, n); i = 0, 1, 2; 0 \leq n \leq M$ includes the states 1,0 and 2,0 as well! 6) The formula for the expected number of server vacation is correct because $P_{0,n}(t)$ is when the system is on vacation. I do not agree with it. The formula computes the expected number of the customers found in the system when the system is on vacation! 7) The system starts empty with $P_{(0,0)}(t) = 1$ and $P_{(i,n)}(t) = 0$ for all $i = 0, 1, 2$. For defining the initial state you should substitute time 0 in the brackets! 8) It is purposeless to define the formula for the expected idle period at time (t). You are not able to compute the value by solving the equation system! The value is still 0! And I think you should delete it also in the results of the experiments! 9) The graph legend for vertical axis is not readably. 10) Improve formatting the paper! And I think there are a lot of numerical results; I recommend to use only the results for some M.	The vacation length is exponentially distributed. This has been corrected. The script to solve the code is attached to the corrected copy. The equation in line 113 explains the state dependent. Note that the servers have to undergo several vacations in the multiple vacation policy. The expected idle period in the multiple vacations is zero. This is so because the server is not idle in multiple vacations. The server will continue to take vacations until there is one failed machine in the system. While in the single vacation once the server comes back from vacation he waits idly until there is one failed machine in the system. The state 1, 0 mean the server is active without a failed machine-the server is only active if there is failed machine to repair. While 2, 0 means the server breaks down without a failed machine-this doesn't exist because the server only breaks down when it is repairing failed machine. The expected number of customer or failed machine is calculated with $E[F(t)] = \sum_{n=0}^M nP_{0,n}(t) + \sum_{n=0}^M nP_{1,n}(t) + \sum_{n=1}^M nP_{2,n}(t)$ Not $P_{0,n}(t)$. The system starts empty with $P_{(0,0)}(t) = 1$ and $P_{(i,n)}(t) = 0$ for all $i = 0, 1, 2$ has been corrected.